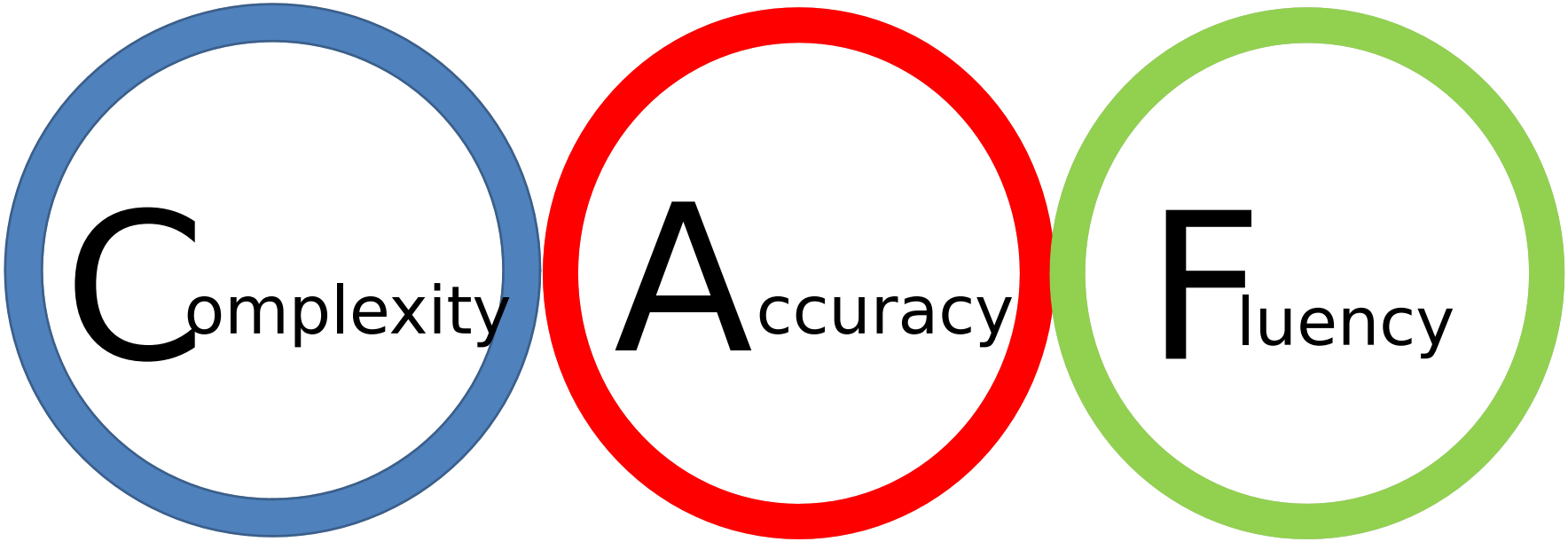
Dimensions of L2 Oral Language Performance: Study of Complexity, Accuracy, and Fluency Development

Miho Tomita
Sophia University, Graduate School of Languages and Linguistics,

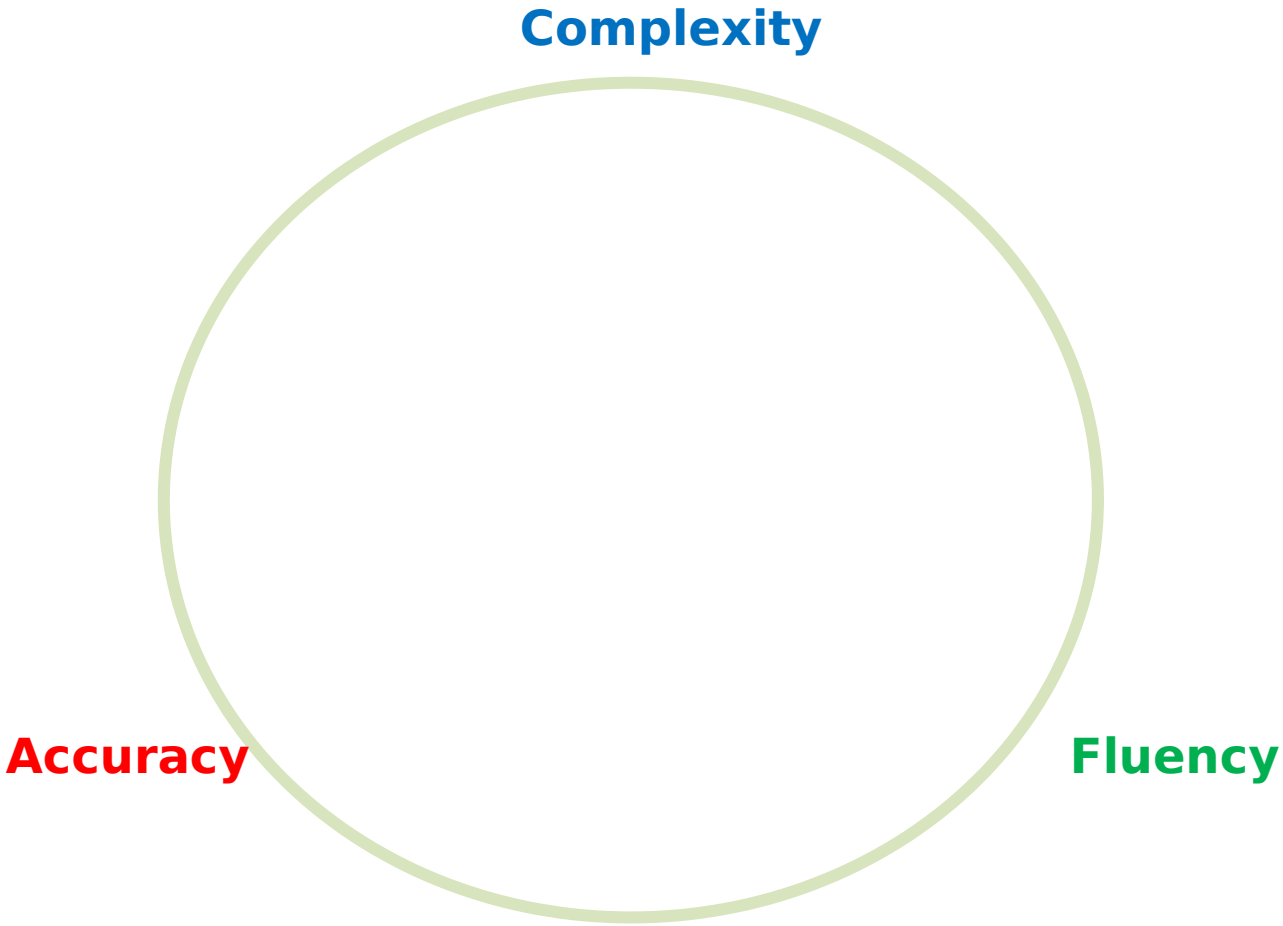
Introduction



Level of CAF can inform how much a learner has mastered L2.

Purpose of learning L2:

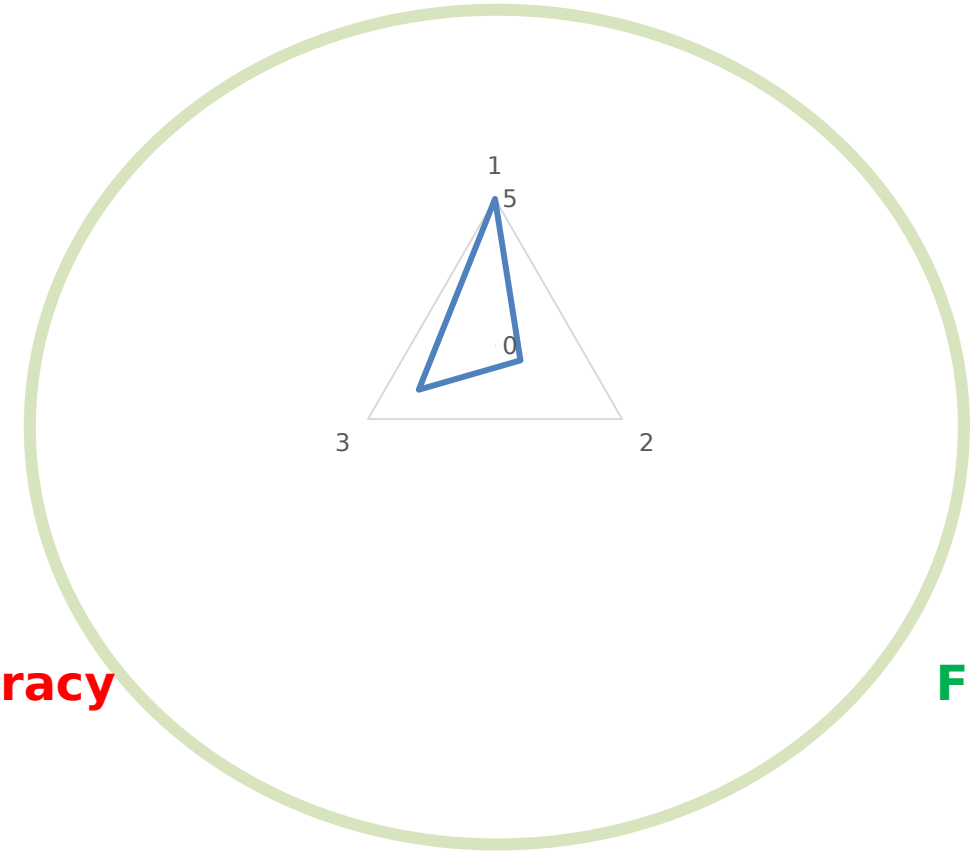
master all three CAF components equally



Purpose of learning L2:

master all three CAF components equally

Complexity

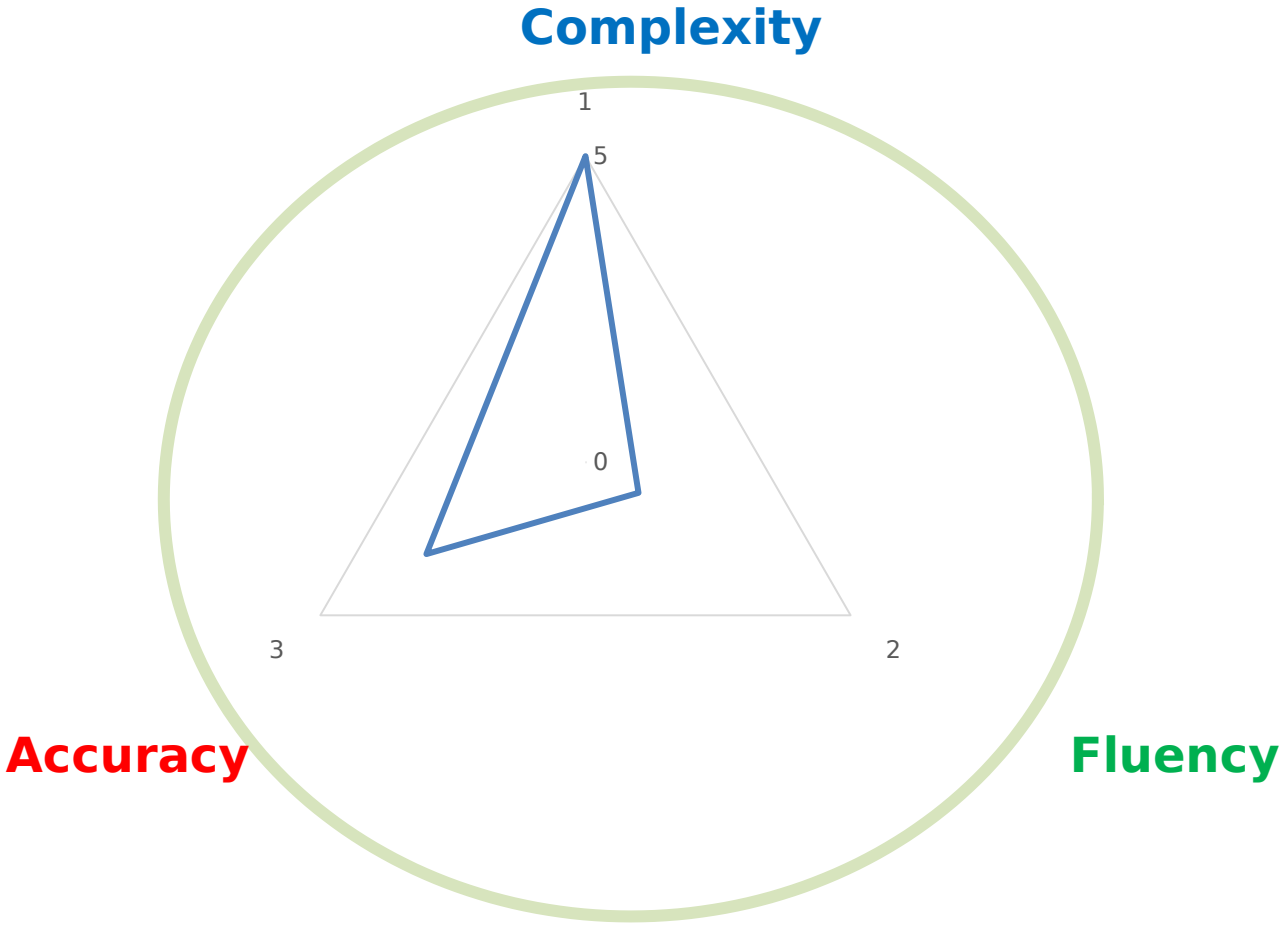


Accuracy

Fluency

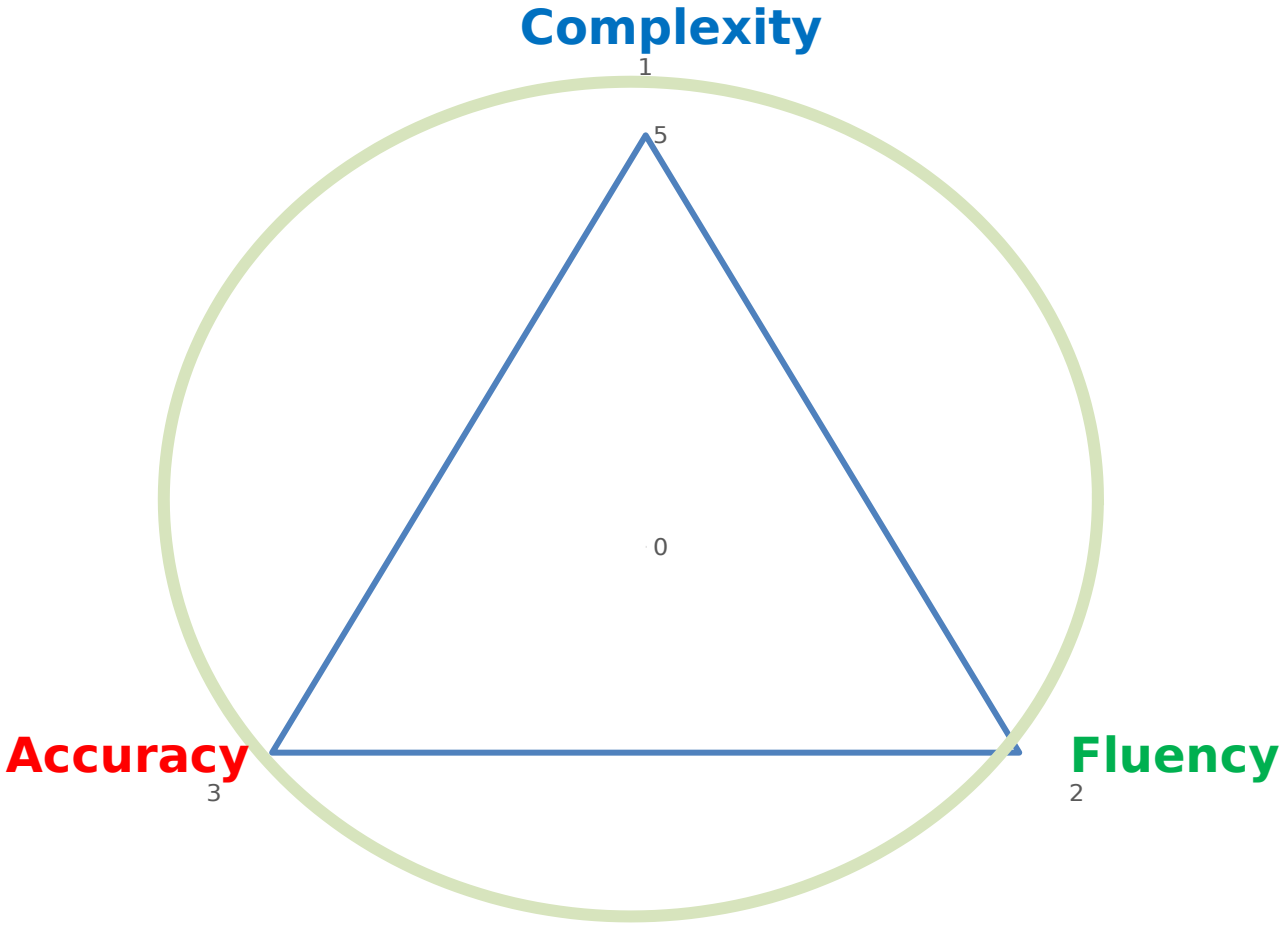
Purpose of learning L2:

master all three CAF components equally



Purpose of learning L2:

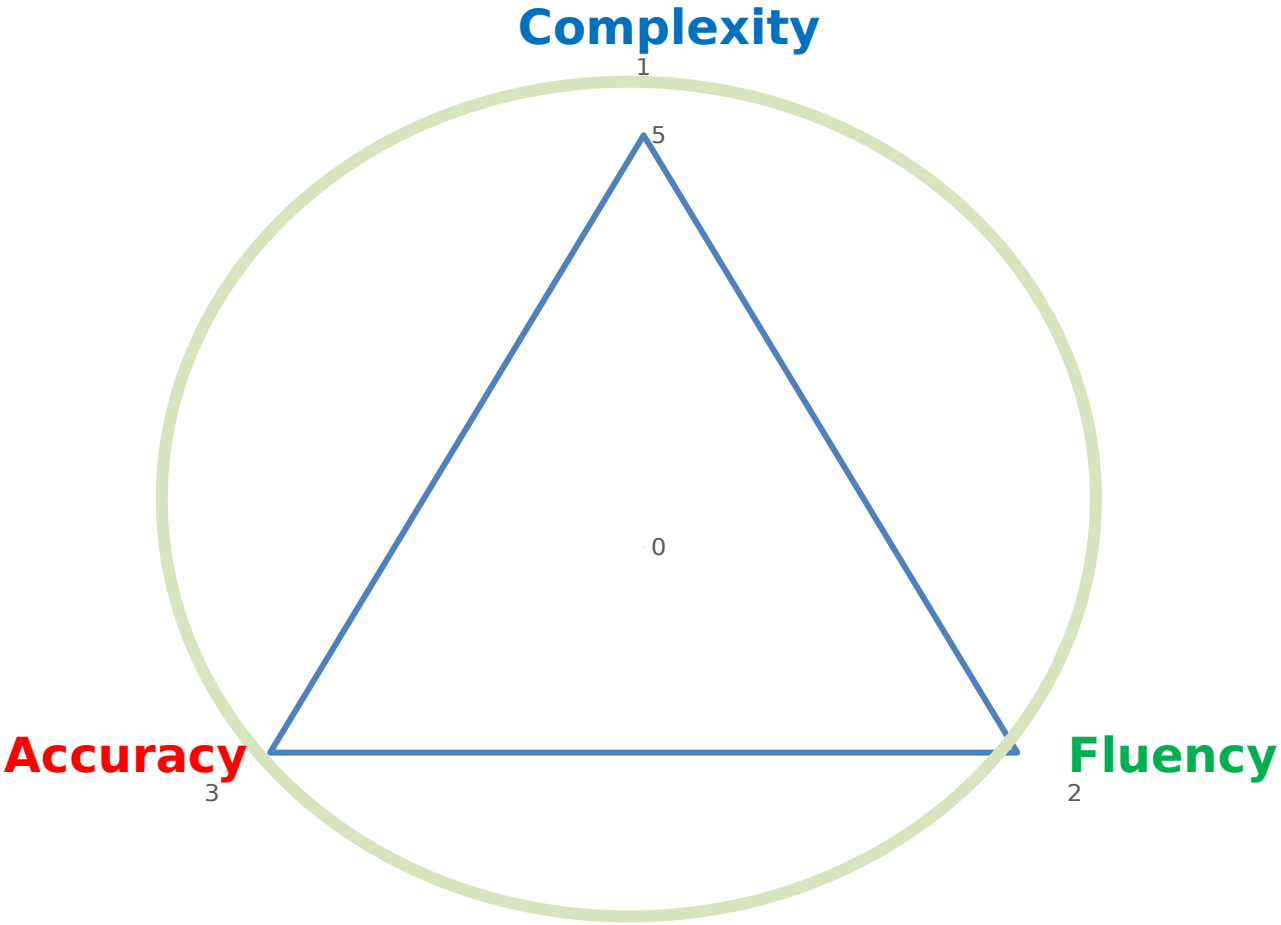
master all three CAF components equally



Cognitive Limitation

Learners cannot devote equal attention to every aspect of CAF.

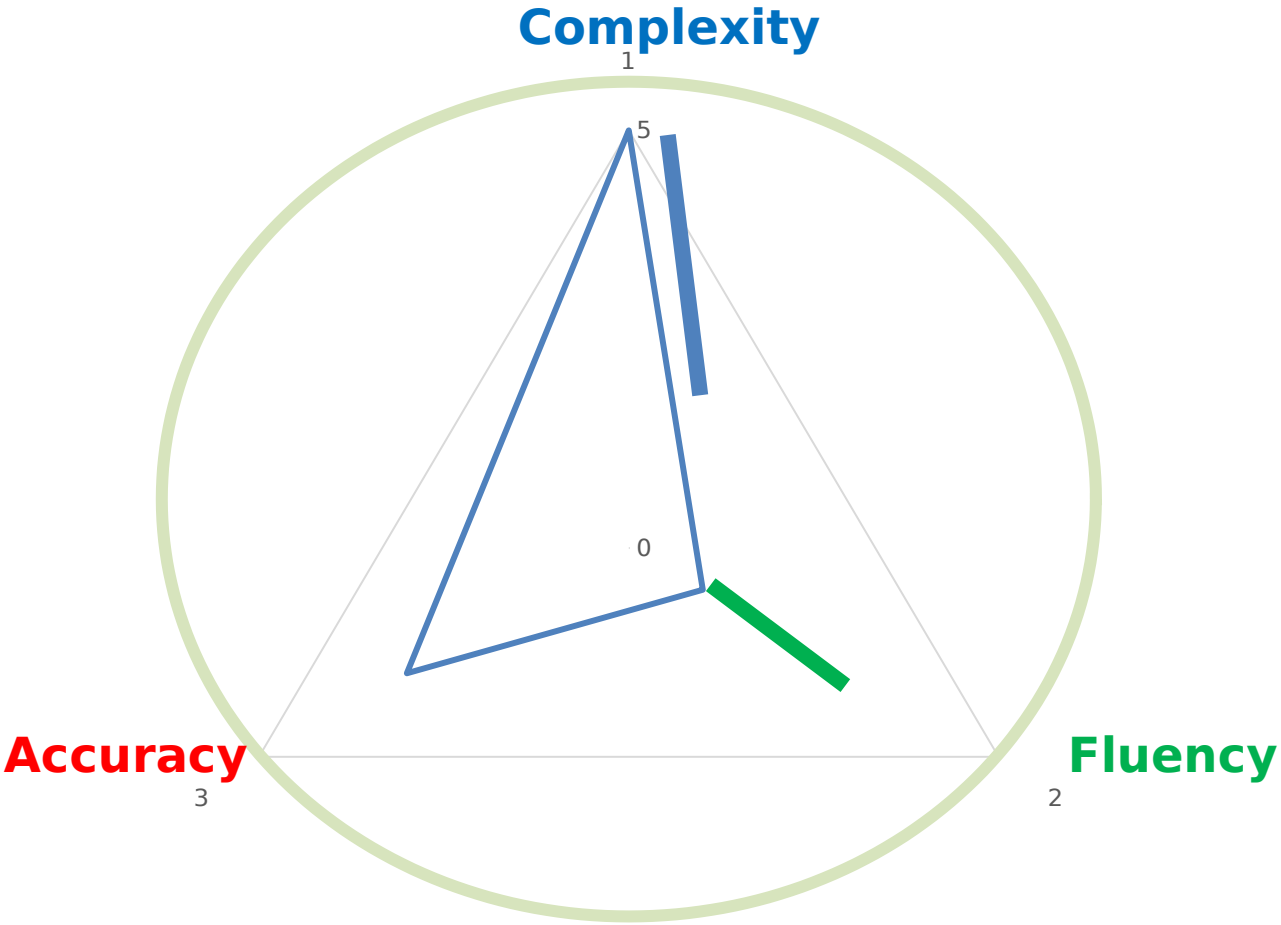
(Bamanger & Gashan, 2014)



Cognitive Limitation

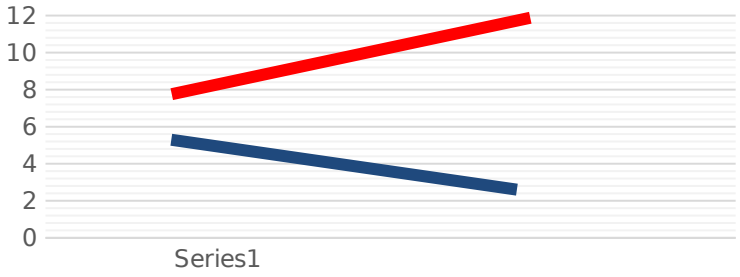
Learners cannot devote equal attention to every aspect of CAF.

(Bamanger & Gashan, 2014)



Limited Capacity hypothesis (Skehan, 1996)

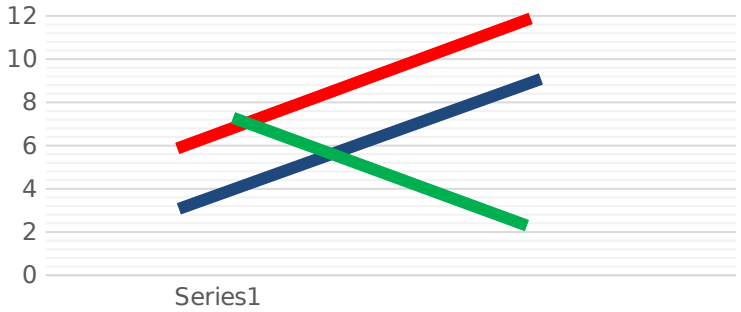
Concentration on one draws attention away from another



Cognition Hypothesis

(Robinson, 2011)

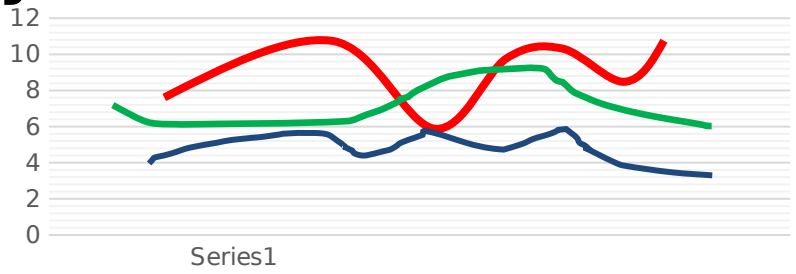
No need to trade gains in attention to one aspect against losses in another



Dynamic Systems Theory / DST

(Larasen-Freeeman, 2006)

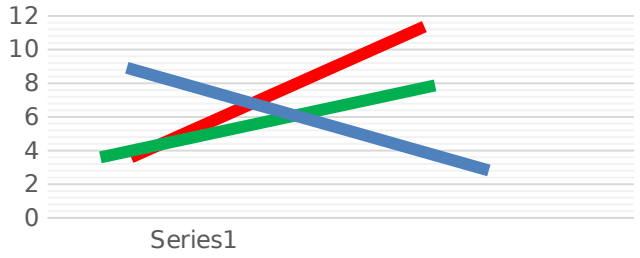
Growth and decline characteristics that are influenced by many internal and external factors



Literature on CAF Interaction

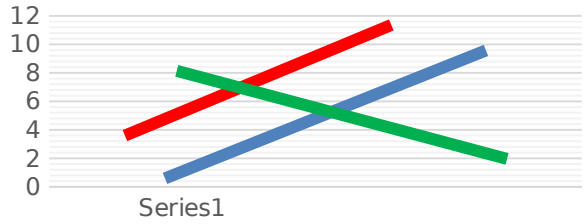
Bei (2013)

Strong correlation between fluency and accuracy, competition between accuracy and complexity.



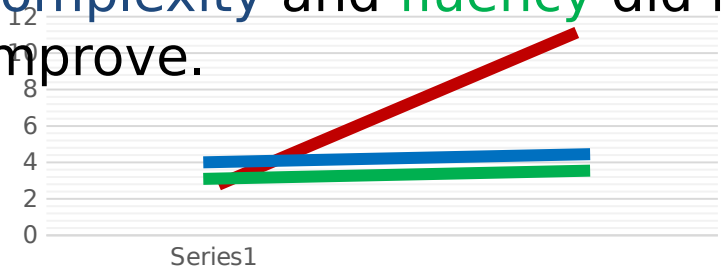
Yuan and Ellis (2003)

Strong correlation between complexity and accuracy at the expense of fluency.



Michel, Kuiken, and Vedder (2007)

More accuracy, but grammatical complexity and fluency did not improve.



Most works:
a single point in time
→ **Longitudinal Studies Necessary**

Literature on CAF Interaction

CAF:

intensively investigated topic

Mixed Results

Proficiency Effects

→ studies in relation to proficiency

L2 Oral Language Performance: Development Over time

RQ1: How do the CAF of L2 speaking develop over time?

RQ2: How do the components of CAF interact with each other in the development of L2 speaking over time?

RQ3: How does learners' proficiency relate to CAF improvement in the spoken production of L2 over time?

Research Design

Participants

- 31 Japanese college students
- Aged 19–21 years

- Group 1: Lower level (mean TOEIC 455.4)
- Group 2: Intermediate (mean TOEIC 626.8)

Oral Data

- Four times (one month apart)
  - An impromptu speech task

Round 1	18-Apr	Some people prefer to live in a small town. Others prefer to live in a big city. Which place would you prefer to live in?
Round 2	16-May	Some people prefer to eat at restaurants. Other people prefer to eat at home. Which do you prefer?
Round 3	13-Jun	Do you think cram schools are important? Why?
Round 4	18-Jul	Do you agree or disagree with the following statement. “Students should have part-time jobs.”

Self-reported Evaluation (Questionnaire)

	strongly disagree	disagree	neither agree or disagree	agree	strongly agree
1. This task was difficult.	1	2	3	4	5
2. I was able to express my opinion.	1	2	3	4	5
3. I paid attention to correct pronunciation while speaking.	1	2	3	4	5
4. I paid attention to correct grammar usage while speaking.	1	2	3	4	5
5. I found myself thinking in Japanese when delivering a speech.	1	2	3	4	5
6. I felt confident when I was speaking English during the task.	1	2	3	4	5
7. I didn't worry about making mistakes during the task.	1	2	3	4	5

Developed by the Author, using the Foreign Language Classroom Anxiety Scale (FLCAS) from Horwitz et al. (1986)

Analysis

- transcribed and coded into clauses (finite and non-finite clauses) and AS-unit.

Factor	Code	Measure	Source Example
Syntactic Complexity	SC1	No. of words per AS-Unit	Mehnert (1998), Bygate (2001)
	SC2	No. of clauses per AS-Unit	Yuan & Ellis (2003), Koizumi (2005)
Lexical Complexity	LC	Index of lexical diversity (D)	Kormos & Denes (2004), Vecellotti (2017)
Accuracy	AC1	No. of error-free clause per clause	Ellis & Barkhuizen (2005)
	AC2	No. of errors per word	Takiguchi (2004), Koizumi (2005)
Fluency	F1	No. of words per minute	Koizumi & Yamanouchi (2003), Ishikawa (2015)
	F2	No. of clauses per minute	Takiguchi (2004)

Analysis

RC1: CAF trajectories

- Mean CAF scores in each round for each group were calculated
- One-way repeated-measure ANOVA

RC2: CAF construct relationships over time

- Within-individual correlation analyses
- Rounds 1 to 4 for each measure were entered into the calculations
- Correlations between the trajectories were analyzed

RC3: Proficiency effects

- Compare groups 1 and 2 results across the four time points
- Two-way repeated-measures ANOVA

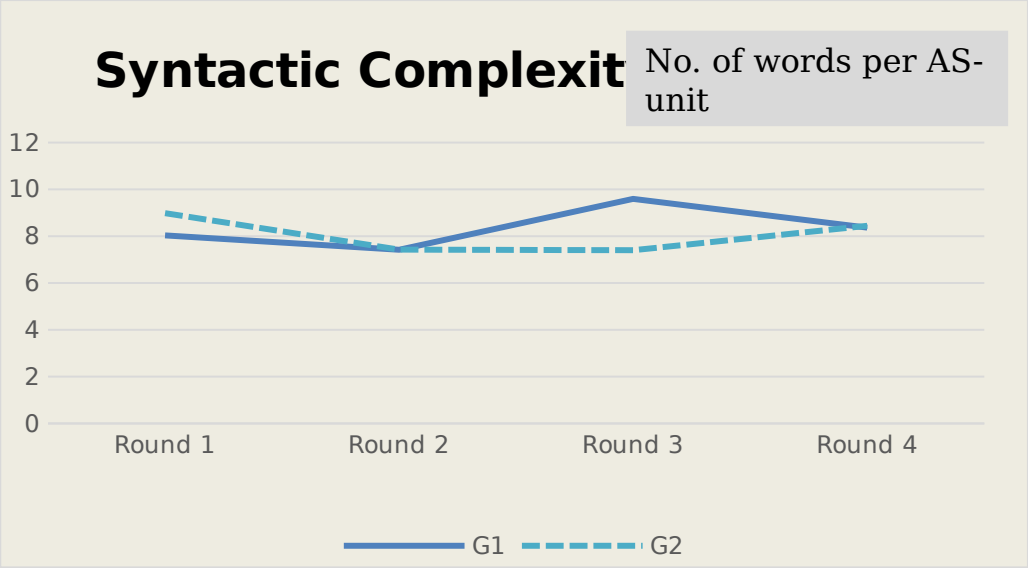
Results & Discussion

Results

RC1: CAF trajectories

Results

RQ1 CAF Trajectories



G1: Non-linear trajectory characterized by fluctuations
ANOVA: differed statistically significantly
Post hoc: Differed R2-3

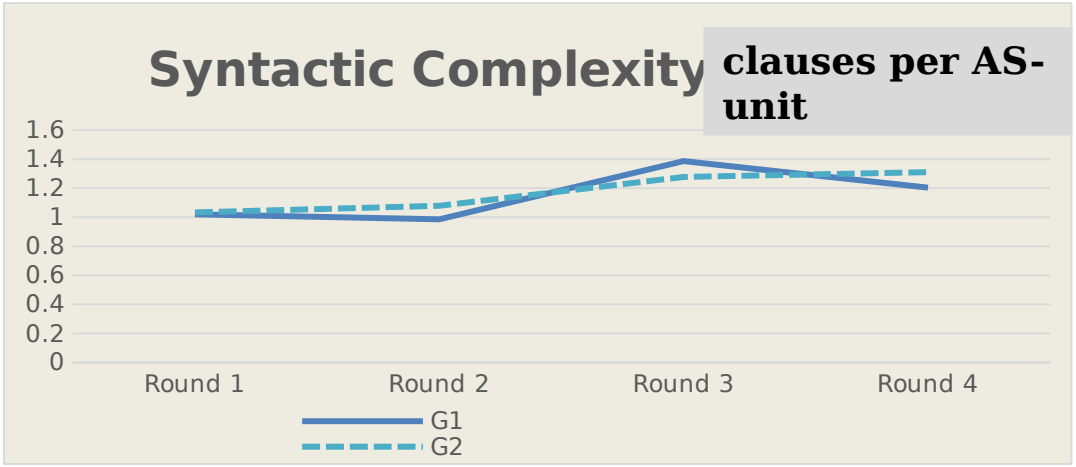
G2: mild U-shape curve
ANOVA: Differed statistically significantly
Post hoc: Differed R2-3

Syntactic Complexity 1								
	Round 1		Round 2		Round 3		Round 4	
Group	M	SD	M	SD	M	SD	M	SD
G1 (n=17)	8.03	2.10	7.42	1.20	9.59	2.33	8.36	1.34
G2 (n=14)	8.98	1.97	7.43	1.10	7.40	0.99	8.44	1.46
Mean	8.51	2.04	7.42	1.15	8.50	1.66	8.40	1.40

Results

RQ1 CAF Trajectories

Students in both groups were able to make more complex sentences over time.



	Lexical Complexity							
	Round 1		Round 2		Round 3		Round 4	
Group	M	SD	M	SD	M	SD	M	SD
G1 (n=17)	0.55	0.06	0.49	0.07	0.53	0.07	0.57	0.06
G2(n=14)	0.49	0.13	0.47	0.06	0.49	0.10	0.53	0.05
Mean	0.52	0.10	0.48	0.06	0.51	0.08	0.55	0.06

G1:

ANOVA: Differed statistically significantly

Post hoc: Differed R2-3, R1-4

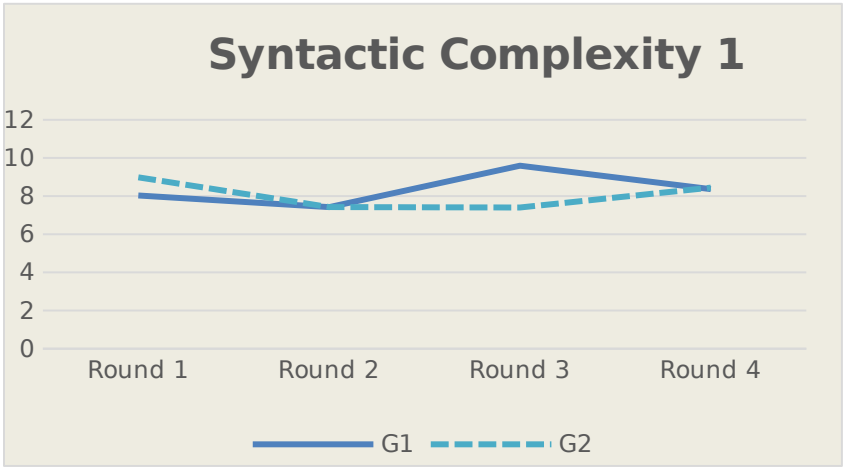
G2

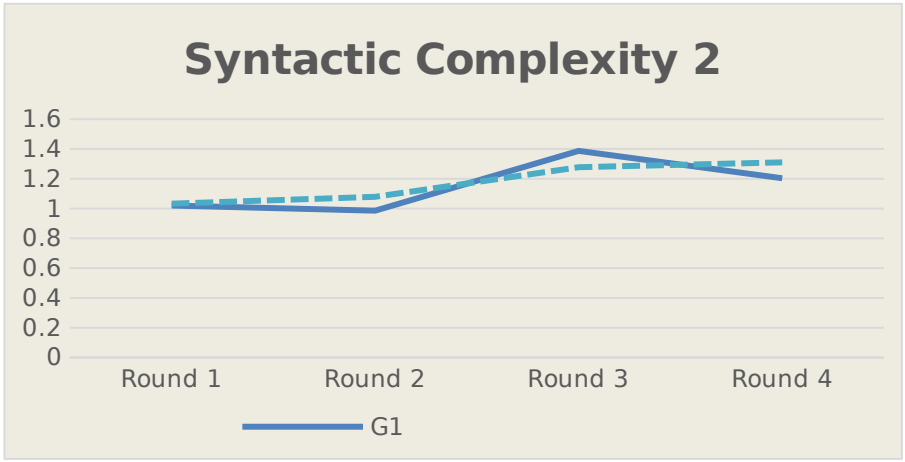
ANOVA: Differed statistically significantly

Post hoc: Differed R1-4

Results

RQ1 CAF Trajectories





Results

RQ1 CAF Trajectories

A mild positive growth was seen in syntactic complexity for both groups.

Learners' willingness to communicate and their performance may be correlated (Norris and Ortega, 2009).

Round 1:
There are many things I wanted to say, but I could not explain them in detail.

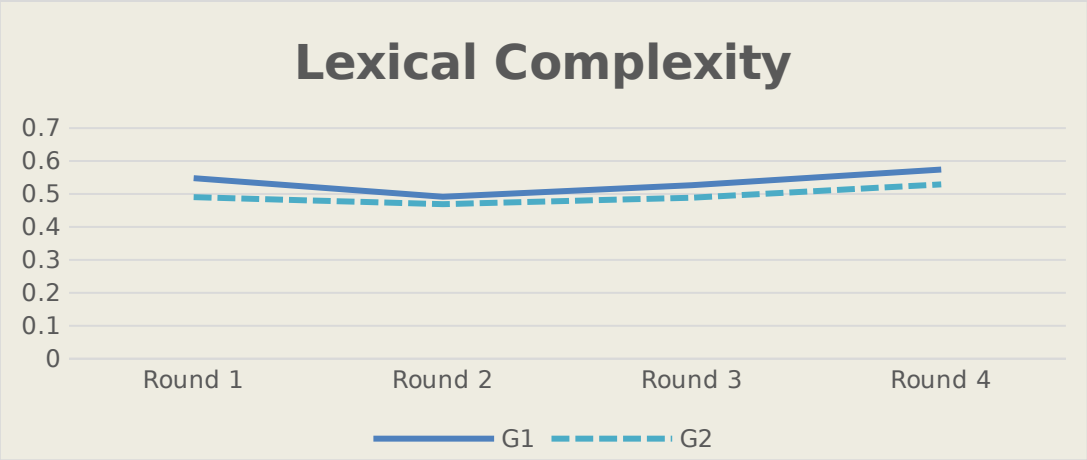
Round 2:
I think I did better because I just tried to push out all my thoughts as much as possible.

Round 3: I wasn't able to express what I wanted to say. The sentences are always short. I had a hard time.

Round 4: This is very difficult, and I'm not good at it. To overcome anxiety, I would like to continue and do whatever I can.

Results
RQ1 CAF Trajectories

No significant differences between Rounds 1 and 4 for both groups



ANOVA:
Differed among the four time points for both groups.

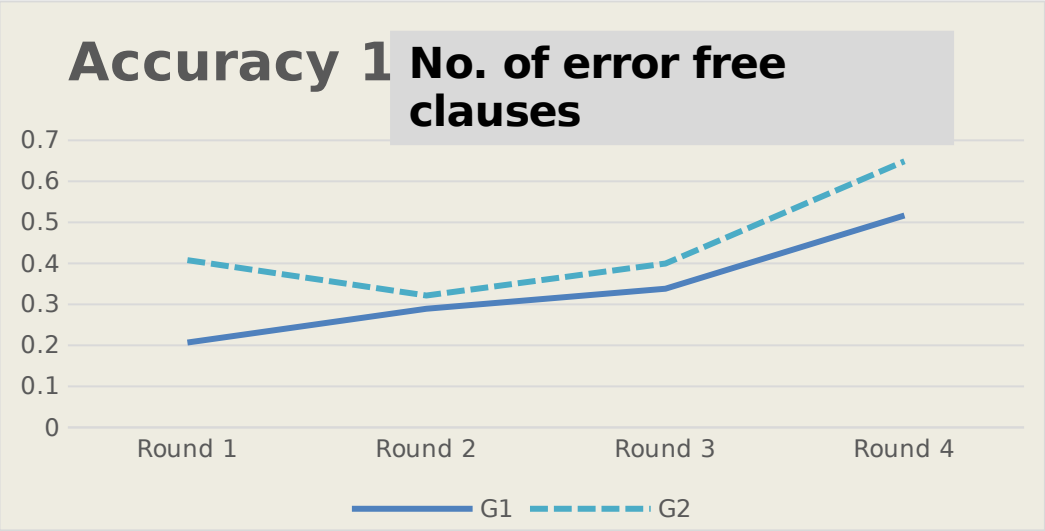
Post hoc comparison:
G1: Differences 1→2, no differences 1→4
G2: No differences 1→4

	Lexical Complexity							
	Round 1		Round 2		Round 3		Round 4	
Group	M	SD	M	SD	M	SD	M	SD
G1 (n=17)	0.55	0.06	0.49	0.07	0.53	0.07	0.57	0.06
G2(n=14)	0.49	0.13	0.47	0.06	0.49	0.10	0.53	0.05
Mean	0.52	0.10	0.48	0.06	0.51	0.08	0.55	0.06

Level of effort for retrieving varied lexical items remained the same.

Results
RQ1 CAF Trajectories

Differences between R3 and 4 and between R1 and 4 for both groups.

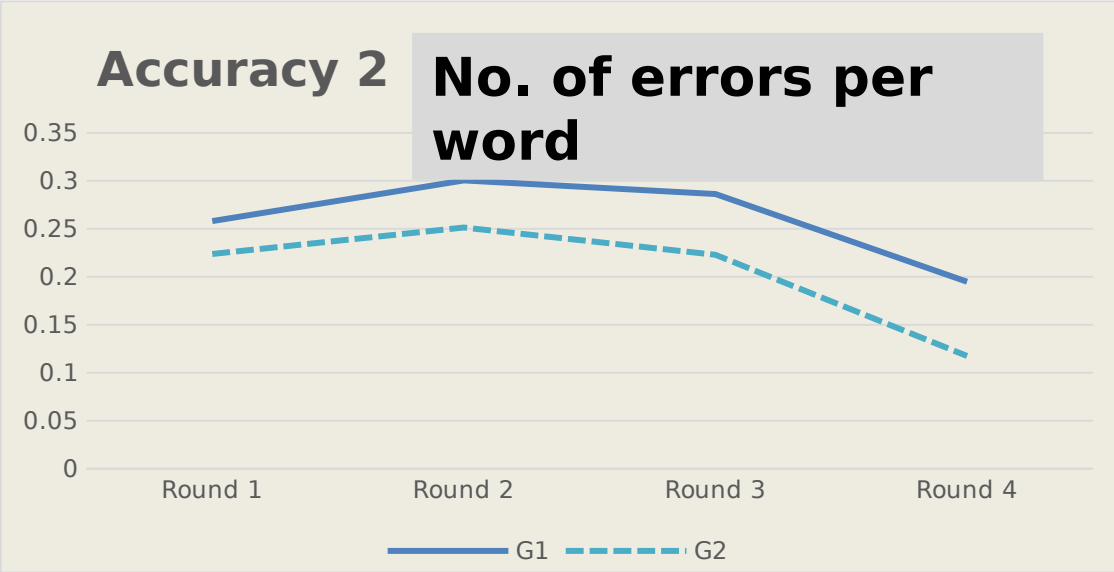


ANOVA:
Differed among the four time points for both groups.
Post hoc comparison:
Differences 3 →4 and 1 → 4 for both groups

	Accuracy 1							
	Round 1		Round 2		Round 3		Round 4	
Group	M	SD	M	SD	M	SD	M	SD
G1 (n=17)	0.21	0.19	0.29	0.25	0.34	0.15	0.52	0.20
G2 (n=14)	0.41	0.31	0.32	0.24	0.40	0.11	0.65	0.17
Mean	0.31	0.25	0.31	0.24	0.37	0.13	0.58	0.18

Results
RQ1 CAF Trajectories

Differences between R3 and 4 for both and R1 and 4 for group 2



ANOVA:
Differences among the time points for both groups

Post hoc comparison:
G1: Differences 3 → 4,
G2: Differences 3 → 4 , 1 → 4

	Accuracy 2							
	Round 1		Round 2		Round 3		Round 4	
Group	M	SD	M	SD	M	SD	M	SD
G1 (n=17)	0.26	0.13	0.30	0.11	0.29	0.12	0.19	0.07
G2 (n=14)	0.22	0.09	0.25	0.12	0.22	0.05	0.12	0.07
Mean	0.24	0.11	0.28	0.11	0.25	0.09	0.16	0.07

Self-reported evaluation

Group 1

	Round 1		Round 2		Round 3		Round 4	
	M	SD	M	SD	M	SD	M	SD
(Content) I was able to express my opinion.	2.74	0.87	3.11	0.81	3.39	0.78	3.47	0.77
(Attention/Grammar)I paid attention to correct grammar usage while speaking.	2.47	0.77	2.58	0.61	2.83	0.79	3.37	0.68
(Anxiety/mistake)I didn't worry about making mistakes during the task.	**2.95**	0.97	**3.21**	1.08	**3.33**	0.97	**3.42**	1.02

Group 2

	Round 1		Round 2		Round 3		Round 4	
	M	SD	M	SD	M	SD	M	SD
(Content) I was able to express my opinion.	2.79	0.98	3.44	0.78	3.44	0.92	3.58	0.96
(Attention/Grammar)I paid attention to correct grammar usage while speaking.	2.58	1.07	2.72	0.96	3.06	0.94	3.26	0.73
(Anxiety/mistake)I didn't worry about making mistakes during the task.	**3.42**	1.22	**3.5**	1.29	**3.89**	1.13	**3.95**	1.03

Self-reported evaluation

Group 1

	Round 1		Round 2		Round 3		Round 4	
	M	SD	M	SD	M	SD	M	SD
(Content) I was able to express my opinion.	2.74	0.87	3.11	0.81	3.39	0.78	3.47	0.77
(Attention/Grammar)I paid attention to correct grammar usage while speaking.	2.47	0.77	2.58	0.61	2.83	0.79	3.37	0.68
(Anxiety/mistake)I didn't worry about making mistakes during the task.	**2.95**	0.97	**3.21**	1.08	**3.33**	0.97	**3.42**	1.02

Group 2

	Round 1		Round 2		Round 3		Round 4	
	M	SD	M	SD	M	SD	M	SD
(Content) I was able to express my opinion.	2.79	0.98	3.44	0.78	3.44	0.92	3.58	0.96
(Attention/Grammar)I paid attention to correct grammar usage while speaking.	2.58	1.07	2.72	0.96	3.06	0.94	3.26	0.73
(Anxiety/mistake)I didn't worry about making mistakes during the task.	**3.42**	1.22	**3.5**	1.29	**3.89**	1.13	**3.95**	1.03

Self-reported evaluation

Group 1

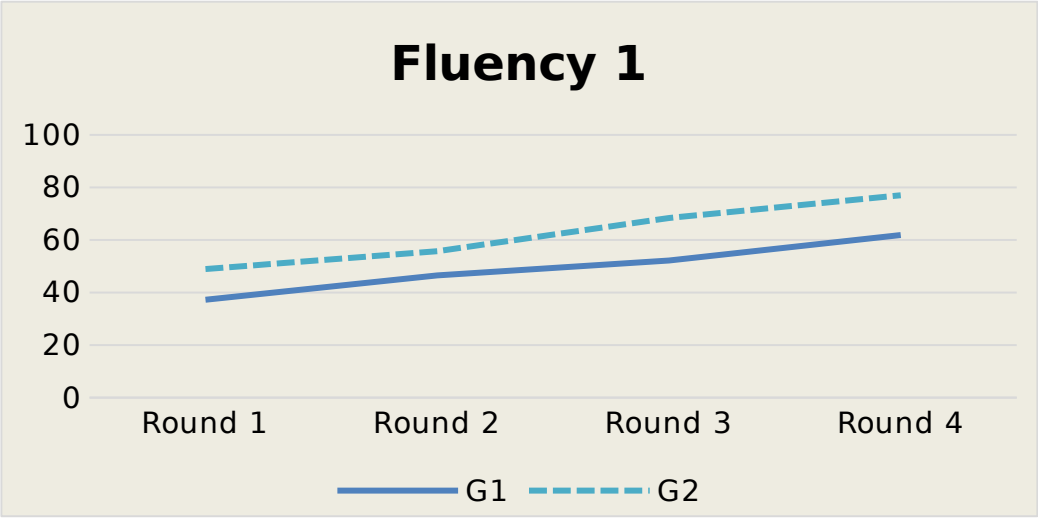
	Round 1		Round 2		Round 3		Round 4	
	M	SD	M	SD	M	SD	M	SD
(Content) I was able to express my opinion.	2.74	0.87	3.11	0.81	3.39	0.78	3.47	0.77
(Attention/Grammar)I paid attention to correct grammar usage while speaking.	2.47	0.77	2.58	0.61	2.83	0.79	3.37	0.68
(Anxiety/mistake)I didn't worry about making mistakes during the task.	**2.95**	0.97	**3.21**	1.08	**3.33**	0.97	**3.42**	1.02

Group 2

	Round 1		Round 2		Round 3		Round 4	
	M	SD	M	SD	M	SD	M	SD
(Content) I was able to express my opinion.	2.79	0.98	3.44	0.78	3.44	0.92	3.58	0.96
(Attention/Grammar)I paid attention to correct grammar usage while speaking.	2.58	1.07	2.72	0.96	3.06	0.94	3.26	0.73
(Anxiety/mistake)I didn't worry about making mistakes during the task.	**3.42**	1.22	**3.5**	1.29	**3.89**	1.13	**3.95**	1.03

Results
RQ1 CAF Trajectories

Significant differences between R1 and 4 for both groups



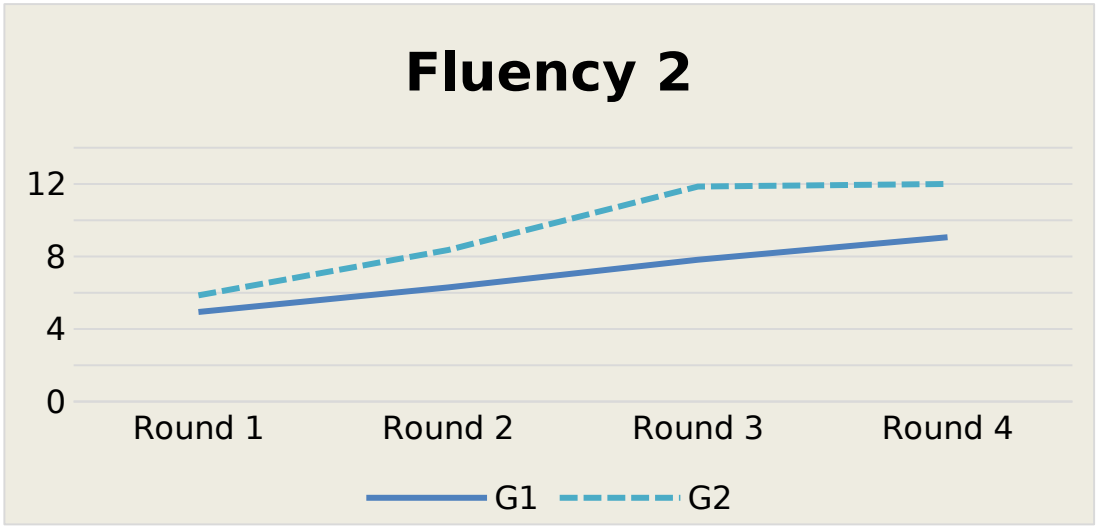
ANOVA:
Differences among the time points

Post hoc comparison:
G1: Differences R1 and 2, R3 and 4,
R1 and 4
G2:Differences R2 and 3, R3 and 4, R1 and 4

	Fluency 1							
	Round 1		Round 2		Round 3		Round 4	
Group	M	SD	M	SD	M	SD	M	SD
G1 (n=17)	37.24	11.40	46.53	14.95	52.18	14.03	61.88	12.04
G2 (n=14)	48.93	11.00	55.71	9.02	68.36	13.37	77.00	12.71
Mean	43.08	11.20	51.12	11.98	60.27	13.70	69.44	12.37

Results
RQ1 CAF Trajectories

Significant differences between R1 and 4 for both groups



ANOVA:
Differences among the time points

Post hoc comparison:
G1: Differences R2 and 3, R1 and 4,
R1 and 4
G2:Differences R1 and 2, R2 and 3, R1 and 4

	Fluency 2							
	Round 1		Round 2		Round 3		Round 4	
Group	M	SD	M	SD	M	SD	M	SD
G1 (n=17)	4.94	2.01	6.29	2.52	7.82	2.94	9.06	3.28
G2 (n=14)	5.86	1.88	8.36	2.59	11.86	2.57	12.00	2.04
Mean	5.40	1.94	7.33	2.55	9.84	2.75	10.53	2.66

Results
RQ1 CAF Trajectories

Significant differences between R1 and 4 for both groups

Positive correlation between the developmental path of fluency and students' confidence in speaking

Mean scores improving over time

G1: **2.00 - 2.32 - 2.56 - 2.90**

G2: **2.53 - 2.89 - 3.11 - 3.21**

	Round 1		Round 2		Round 3		Round 4	
	M	SD	M	SD	M	SD	M	SD
1. This task was difficult.	3.26	1.10	2.95	1.03	2.94	1.00	3.37	1.01
2. I was able to express my opinion.	2.74	0.87	3.11	0.81	3.39	0.78	3.47	0.77
3. I paid attention to correct pronunciation while speaking.	2.89	0.94	2.84	0.69	3.17	0.71	3.63	0.90
4. I paid attention to correct grammar usage while speaking.	2.47	0.77	2.58	0.61	2.83	0.79	3.37	0.68
5. I found myself thinking in Japanese when delivering a speech.	2.89	1.56	2.47	1.47	2.50	1.42	2.37	1.26
6. I felt confident when I was speaking English during the task.	2.00	1.11	2.32	0.67	2.56	0.62	2.89	0.74
7. I didn't worry about making mistakes during the task.	2.95	0.97	3.21	1.08	3.33	0.97	3.42	1.02

Round 1		Round 2		Round 3		Round 4	
M	SD	M	SD	M	SD	M	SD
3.05	0.91	3.06	0.80	2.89	0.96	3.11	1.20
2.79	0.98	3.44	0.78	3.44	0.92	3.58	0.96
2.79	1.18	2.89	1.02	2.83	0.79	3.05	0.78
2.58	1.07	2.72	0.96	3.06	0.94	3.26	0.73
2.05	1.31	2.44	1.10	1.89	1.13	2.21	1.23
2.53	1.17	2.89	0.96	3.11	0.76	3.21	1.03
3.42	1.22	3.50	1.29	3.89	1.13	3.95	1.03

Results
RQ2: CAF Interaction

Group 1

	Syntactic Complexity 1	Syntactic Complexity 2	Lexical Complexity	Accuracy 1	Accuracy 2	Fluency 1	Fluency 2
Syntactic Complexity 1	-----	-----	-0.39**	0.05	-0.07	0.20*	0.17*
Syntactic Complexity 2	-----	-----	-0.08	-0.02	-0.11*	0.08	0.50**
Lexical Complexity			-----	-0.47**	0.74**	0.37**	0 .10*
Accuracy 1				-----	-----	-0.29*	0 .10*
Accuracy 2				-----	-----	0.36**	0.02
Fluency 1						-----	-----
Fluency 2						-----	-----

Note: *Significant at $p < 0.05$ level; **significant at $p < 0.01$ level

Group 2

	Syntactic Complexity 1	Syntactic Complexity 2	Lexical Complexity	Accuracy 1	Accuracy 2	Fluency 1	Fluency 2
Syntactic Complexity 1	-----	-----	-0.24*	0.13*	0.04	0.30**	-0.13*
Syntactic Complexity 2	-----	-----	-0.39**	-0.02	-0.28*	0.04	0.52**
Lexical Complexity			-----	-0.21*	0.36**	0.03	-0.08
Accuracy 1				-----	-----	0.01	-0.07
Accuracy 2				-----	-----	0.22*	-0.01
Fluency 1						-----	-----
Fluency 2						-----	-----

Note: *Significant at $p < 0.05$ level; **significant at $p < 0.01$ level

Results
RQ2: CAF Interaction

Negative correlation between LC and SC.
Positive correlation between LC and fluency.

Group 1

	Syntactic Complexity 1	Syntactic Complexity 2	Lexical Complexity	Accuracy 1	Accuracy 2	Fluency 1	Fluency 2
Syntactic Complexity 1	-----	-----	-0.39**	0.05	-0.07	0.20*	0.17*
Syntactic Complexity 2	-----	-----	-0.08	-0.02	-0.11*	0.08	0.50**
Lexical Complexity			-----	-0.47**	0.74**	0.37**	0 .10*
Accuracy 1				-----	-----	-0.29*	0 .10*
Accuracy 2				-----	-----	0.36**	0.02
Fluency 1						-----	-----
Fluency 2						-----	-----

Note: *Significant at $p < 0.05$ level; **significant at $p < 0.01$ level

Group 2

	Syntactic Complexity 1	Syntactic Complexity 2	Lexical Complexity	Accuracy 1	Accuracy 2	Fluency 1	Fluency 2
Syntactic Complexity 1	-----	-----	-0.24*	0.13*	0.04	0.30**	-0.13*
Syntactic Complexity 2	-----	-----	-0.39**	-0.02	-0.28*	0.04	0.52**
Lexical Complexity			-----	-0.21*	0.36**	0.03	-0.08
Accuracy 1				-----	-----	0.01	-0.07
Accuracy 2				-----	-----	0.22*	-0.01
Fluency 1						-----	-----
Fluency 2						-----	-----

Note: *Significant at $p < 0.05$ level; **significant at $p < 0.01$ level

Results
RQ2: CAF Interaction

Positive correlation between accuracy and complexity.

Group 1

	Syntactic Complexity 1	Syntactic Complexity 2	Lexical Complexity	Accuracy 1	Accuracy 2	Fluency 1	Fluency 2
Syntactic Complexity 1	-----	-----	-0.39**	0.05	-0.07	0.20*	0.17*
Syntactic Complexity 2	-----	-----	-0.08	-0.02	-0.11*	0.08	0.50**
Lexical Complexity			-----	-0.47**	0.74**	0.37**	0 .10*
Accuracy 1				-----	-----	-0.29*	0 .10*
Accuracy 2				-----	-----	0.36**	0.02
Fluency 1						-----	-----
Fluency 2						-----	-----

Note: *Significant at $p < 0.05$ level; **significant at $p < 0.01$ level

Group 2

	Syntactic Complexity 1	Syntactic Complexity 2	Lexical Complexity	Accuracy 1	Accuracy 2	Fluency 1	Fluency 2
Syntactic Complexity 1	-----	-----	-0.24*	0.13*	0.04	0.30**	-0.13*
Syntactic Complexity 2	-----	-----	-0.39**	-0.02	-0.28*	0.04	0.52**
Lexical Complexity			-----	-0.21*	0.36**	0.03	-0.08
Accuracy 1				-----	-----	0.01	-0.07
Accuracy 2				-----	-----	0.22*	-0.01
Fluency 1						-----	-----
Fluency 2						-----	-----

Note: *Significant at $p < 0.05$ level; **significant at $p < 0.01$ level

Results
RQ2: CAF Interaction

Strong tendency toward a positive correlation between fluency and complexity.

Group 1

	Syntactic Complexity 1	Syntactic Complexity 2	Lexical Complexity	Accuracy 1	Accuracy 2	Fluency 1	Fluency 2
Syntactic Complexity 1	-----	-----	-0.39**	0.05	-0.07	0.20*	0.17*
Syntactic Complexity 2	-----	-----	-0.08	-0.02	-0.11*	0.08	0.50**
Lexical Complexity			-----	-0.47**	0.74**	0.37**	0 .10*
Accuracy 1				-----	-----	-0.29*	0 .10*
Accuracy 2				-----	-----	0.36**	0.02
Fluency 1						-----	-----
Fluency 2						-----	-----

Note: *Significant at $p < 0.05$ level; **significant at $p < 0.01$ level

Group 2

	Syntactic Complexity 1	Syntactic Complexity 2	Lexical Complexity	Accuracy 1	Accuracy 2	Fluency 1	Fluency 2
Syntactic Complexity 1	-----	-----	-0.24*	0.13*	0.04	0.30**	-0.13*
Syntactic Complexity 2	-----	-----	-0.39**	-0.02	-0.28*	0.04	0.52**
Lexical Complexity			-----	-0.21*	0.36**	0.03	-0.08
Accuracy 1				-----	-----	0.01	-0.07
Accuracy 2				-----	-----	0.22*	-0.01
Fluency 1						-----	-----
Fluency 2						-----	-----

Note: *Significant at $p < 0.05$ level; **significant at $p < 0.01$ level

Results
RQ2: CAF Interaction

No firm evidence (mixed results) for Fluency and Accuracy.

More detailed analysis needed.

Group 1

	Syntactic Complexity 1	Syntactic Complexity 2	Lexical Complexity	Accuracy 1	Accuracy 2	Fluency 1	Fluency 2
Syntactic Complexity 1	-----	-----	-0.39**	0.05	-0.07	0.20*	0.17*
Syntactic Complexity 2	-----	-----	-0.08	-0.02	-0.11*	0.08	0.50**
Lexical Complexity			-----	-0.47**	0.74**	0.37**	0 .10*
Accuracy 1				-----	-----	-0.29*	0 .10*
Accuracy 2				-----	-----	0.36**	0.02
Fluency 1						-----	-----
Fluency 2						-----	-----

Note: *Significant at $p < 0.05$ level; **significant at $p < 0.01$ level

Group 2

	Syntactic Complexity 1	Syntactic Complexity 2	Lexical Complexity	Accuracy 1	Accuracy 2	Fluency 1	Fluency 2
Syntactic Complexity 1	-----	-----	-0.24*	0.13*	0.04	0.30**	-0.13*
Syntactic Complexity 2	-----	-----	-0.39**	-0.02	-0.28*	0.04	0.52**
Lexical Complexity			-----	-0.21*	0.36**	0.03	-0.08
Accuracy 1				-----	-----	0.01	-0.07
Accuracy 2				-----	-----	0.22*	-0.01
Fluency 1						-----	-----
Fluency 2						-----	-----

Note: *Significant at $p < 0.05$ level; **significant at $p < 0.01$ level

Results

RQ3: Proficiency effect

L2 learners at low and intermediate proficiency levels follow the same pattern of CAF development.

Differences between Group 1 and 2 across the four time points

	F	*p*	*r*
Syntactic Complexity 1	5.61	0.00	0. 81
Syntactic Complexity 2	1.52	0.21	0.58
Lexical Complexity	0.26	0.86	0.28
Accuracy 1	1.05	0.38	0.28
Accuracy 2	0.33	0.80	0.51
Fluency 1	78.97	0.54	0.32
Fluency 2	13.88	0.61	0.98

Note: *df*=3

Syntactic Complexity 1

	Round 1		Round 2		Round 3		Round 4	
Group	M	SD	M	SD	M	SD	M	SD
G1 (n=17)	8.03	2.10	7.42	1.20	9.59	2.33	8.36	1.34
G2 (n=14)	8.98	1.97	7.43	1.10	7.40	0.90	8.49	1.46
Mean	8.51	2.04	7.42	1.15	8.50	1.66	8.40	1.40

Self-reported evaluation for Group 2	Round 1		Round 2		Round 3		Round 4	
	M	SD	M	SD	M	SD	M	SD
1. This task was difficult.	3.05	0.91	3.06	0.80	2.89	0.96	3.11	1.20
2. I was able to express my opinion.	2.79	0.98	3.44	0.78	3.44	0.92	3.58	0.96
3. I paid attention to correct pronunciation while speaking.	2.79	1.18	2.89	1.02	2.83	0.79	3.05	0.78
4. I paid attention to correct grammar usage while speaking.	2.58	1.07	2.72	0.96	3.06	0.94	3.26	0.73

Cognitively demanding task results in greater complexity.
Cognition Hypothesis (Robinson, 2011)

A more complex task pushes learners to obtained higher syntactic scores than a less complex task.
(Ishikawa, 2007).

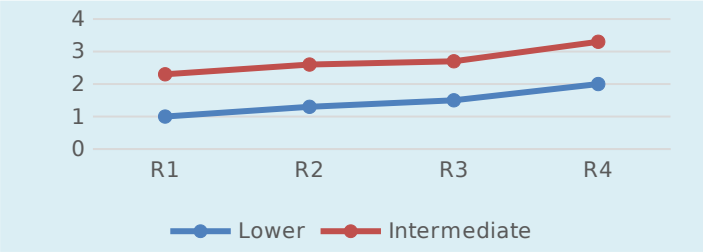
Less demanding task → decreased syntactic complexity

G2 (n=14)	8.98	1.97	7.43	1.10	7.40	0.99	8.44	1.46

	Round 1		Round 2		Round 3		Round 4	
	M	SD	M	SD	M	SD	M	SD
1. This task was difficult.	3.05	0.91	3.06	0.80	2.89	0.96	3.11	1.20
2. I was able to express my opinion.	2.79	0.98	3.44	0.78	3.44	0.92	3.58	0.96

Results

RQ3: Proficiency effect



L2 learners at low and intermediate proficiency levels follow the same pattern of CAF development.

→ Need to take proficiency effects and task types into consideration

Proficiency may interact with the cognitive demands imposed by task complexity.
(Robinson, 2005)

Learner proficiency mediates cognitive complexity. (Sasayama, 2016)

Conclusion

L2 Oral Language Performance: Development Over time

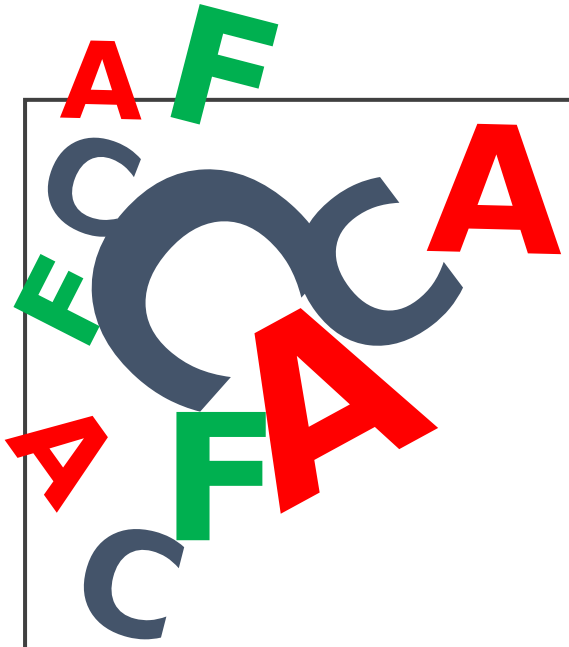
Some improvement in all CAF components over time (except for lexical complexity)

- **Possibility of implementing all CAF at once**
- **Different developmental patterns for each CAF**

L2 Oral Language Performance: Development Over time

Similar trajectories for lower and intermediate learners (except one syntactic complexity)

Need for manipulation/control of inherent task difficulties or conditions



Thank you for listening!

References

Alavi, S. & Sadeghi, K. (2017). Development of Fluency, Accuracy, and Complexity in Productive Skills of EFL learners across Gender and Proficiency: A Chaos Complexity Approach. *Journal of Teaching Language Skills*, *35*(4), 1-35.

Bamanger, E., & Gashan, A. (2014). The effect of planning time on the fluency, accuracy, and complexity of EFL learners' oral production. *Journal of Educational Sciences*, *27* (1), 1-15.

Bei, G. X. (2013). Effects of Immediate Repetition in L2 Speaking Tasks: A Focused Study. *English Language Teaching*, *6*(1), 11-19.

Bygate, M. (2001). Effects of task repetition on the structure and control of oral language. In M. Bygate, P. Skehan, & M. Swain (Eds.), *Researching Pedagogic Tasks: Second Language Learning, Teaching and Testing*(pp.23-48). London: Longman.

Ellis, R. (2003). *Task-based language learning and teaching*. Oxford: Oxford University Press.

Ellis, R. & Barkhuizen, G. (2005). *Analyzing learner language*. Oxford: Oxford University Press.

Horwitz, E. K., Horwitz, M. B., & Cope, J. (1986). Foreign language classroom anxiety.
The Modern language journal, 70(2), 125-132.
Ishikawa, T. (2007). The effect of manipulating task complexity along the [+/−Here-
and-Now] dimension on L2 written narrative discourse.
Investigating tasks in formal language learning (pp.136-156).
Clevedon: Multilingual Matters.
Ishikawa, T. (2015). The Influences of Learners' Basic Attributes and Learning
Histories on L2 Speech Fluency: A Case Study of Japanese and Chinese Learners' of English. *Social and Behavioral Sciences*, 192, 516-525.
Koizumi, R. (2005). Speaking performance measures of fluency, accuracy, syntactic complexity, and lexical complexity. *JABAET (Japan-Britain Association for*
English Teaching) Journal, 9, 5-33.
Koizumi, R., & Yamanouchi, I. (2003). Nihonjin chuugakusei no speaking
no hattatsu [Development in speaking ability among Japanese junior high school students: Using self-introduction task]. *Bulletin of the Kanto-Koshin-Etsu English Language Education Society*, 17, 33-44.
Kormos, J., & Dénes, M. (2004). Exploring measures and

Larsen-Freeman, D. (2006). The emergence of complexity, fluency, and accuracy in thee oral and written production of five Chinese learners of English. *Applied Linguistics, 27*(4), 590-619.

McIntyre, P.D., & Gardner, R. C. (1994). The subtle effects of language anxiety on cognitive processing in the second language. *Language Learning*, *44*, 283-305.

Michel, M. C., F. Kuiken, F. & Vedder, I. (2007). The influence of complexity in monologic versus dialogic tasks in Dutch L2. *International Review of Applied Linguistics, 45*(13), 241-59.

Robinson, P. (2005). Cognitive complexity and task sequencing: Studies in a componential framework for second language task design. *International Review of Applied Linguistics, 43*, 1-32.

Robinson, P. (2011). Task-based language learning: A review of issues. *Language learning*, *61*(1), 1-36.

Sasayama, S. (2016). Is a 'Complex' Task Really Complex? Validating the Assumption of Cognitive Task Complexity. *The Modern Language Journal, 100* (1), 231-254.

Seo, S. J., & Eo, J. H. (2011). Study on the accuracy variation of connective endings by

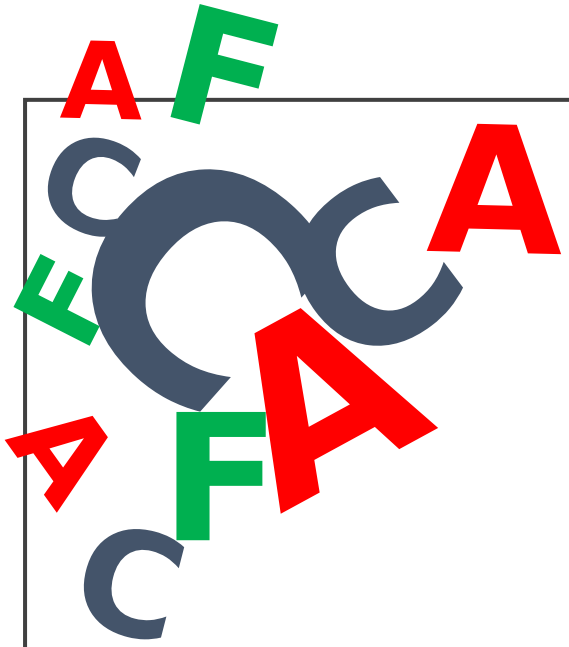
Takiguchi, H. (2004). Nihonjin EFL chuugakusei no speaking nouryoku no hattatu kenkyu [A study of the developments of speaking ability among Japanese junior high school students from the viewpoints of fluency, complexity, and accuracy]. *KATE (Kanto-koshinetsu Association of Teachers of English) Bulletin*, *18*, 1-13.

Totb, Z. (2014). A Native Speaker's Perceptions of High VS. Low Anxious EFL Students' Speaking Performance. In J. Horvath & P. Medgyes (Ed.), *Studies in Hour of Marianne Nikolov* (pp.259-273). Pecs: Lingua Franca Csoport.

Vercellotti, M. L. (2017). The Development of Complexity, Accuracy, and Fluency in Second Language Performance: A Longitudinal Study. *Applied Linguistics, 38*(1), 90-111.

Wolfe-Quintero, K., Inagaki, S., & Kim, H. Y. (1998). *Second language development in writing: Measures of fluency, accuracy & complexity*. Honolulu, hi: University of Hawai'i Press.

Yuan, F & Ellis, R. (2003). The effects of pre-task planning and online planning on fluency, complexity, and accuracy in L2 monologue oral production. *Applied Linguistics, 24*(1), 1-27.



Thank you for listening!